



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/500,635	03/30/2005	Jerzy Kuczynski	403125/WEINSTEIN	3011
23548 7590 02/08/2007 LEYDIG VOIT & MAYER, LTD 700 THIRTEENTH ST. NW SUITE 300 WASHINGTON, DC 20005-3960			EXAMINER ZIMMERMAN, JOSHUA D	
			ART UNIT 2854	PAPER NUMBER
SHORTENED STATUTORY PERIOD OF RESPONSE		MAIL DATE	DELIVERY MODE	
3 MONTHS		02/08/2007	PAPER	

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No. 10/500,635	Applicant(s) KUCZYNSKI ET AL.	
	Examiner Joshua D. Zimmerman	Art Unit 2854	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 March 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-27 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 02 July 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>7/2/04</u> . | 6) <input type="checkbox"/> Other: _____ |

Art Unit: 2854

DETAILED ACTION

Claim Objections

1. Claim 26 is objected to for being indefinite. The phrase "the layers" lacks antecedent basis. For the purposes of examination, it is assumed that applicants intend for the phrase to simply be "layers." Appropriate correction is required.

Specification

2. The disclosure is objected to because of the following informalities: page 4, line 22 contains a typo. The French patent referred to should be "2 802 245." Appropriate correction is required.

The remainder of the specification (including the claims) should be proofread to ensure no other typographical errors are present.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1, 2, 13 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's Admitted Prior Art (AAPA) in view of Teng (US 6541183).

Regarding claims 1 and 2, AAPA teaches “a method for the producing a flexographic printing plate, which has a base layer and a layer of a light sensitive material attached to the base layer (page 1, lines 4-7 and 11), comprising producing an image on the layer of the light sensitive material by selective crosslinking (page 1, lines 6-7), by insolating zones which are to be crosslinked with amplitude modulated laser light, and sweeping the layer of the light sensitive material with the laser light (page 1, lines 17-18), and, thereafter, removing zones which are not crosslinked (page 1, lines 8-9).”

AAPA fails to teach that the laser light has “a wavelength of 390 to 410 nm.” However, Teng teaches that violet laser diodes having a wavelength of “about 405nm” are preferred because they have lower cost (column 10, lines 43-51). AAPA also fails to teach the use of “a bundle of diodes,” as claimed in claim 2. Teng further teaches using a bundle of diodes in order to have a higher throughput (column 2, lines 35-40). Therefore, at the time of the invention, it would have been obvious to one having ordinary skill in the art to use a bundle of violet laser diodes in the method of AAPA in order to have a lower cost method with higher throughput, as taught by Teng.

Regarding claim 13, Teng further teaches “insolating the light sensitive material with an energy in a range from 20 to 1000 mJ/cm². (column 10, lines 50-54).”

Regarding claim 15, the array of diodes taught by Teng operate “in parallel.”

Art Unit: 2854

4. Claims 3-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over AAPA and Teng, further in view of Cohen et al. (US 3264103).

Regarding claim 3, AAPA and Teng fail to teach that the non-crosslinked zones are removed "by liquefying the zones which are not crosslinked thermally, without using solvents." However, Cohen et al. teach such a method (column 1, lines 67-72) in order to avoid using toxic chemicals (column 1, lines 30-33). Therefore, at the time of the invention, it would have been obvious to one having ordinary skill in the art to use the dry process of Cohen et al. in the modified method of AAPA in order to avoid using toxic chemicals.

Regarding claim 4, Cohen et al. further teach "wherein the light sensitive material not crosslinked by the laser light has a variation in viscosity in a temperature range from 60 to 140°C., and the zones that are crosslinked melt at a temperature higher than the temperature range (column 1, line 55-72).

Regarding claim 5, Cohen et al. further teach "wherein the light sensitive material contains at least one selected from the group consisting of high molecular weight polymers, functionalized monomers or oligomers, photo-initiators, reactive or non-reactive diluents, inhibitors and protective agents, and pigments (column 2, lines 14-32)."

5. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over AAPA and Teng, further in view of Arimatsu et al. (US 5317080).

Regarding claim 12, AAPA and Teng teach all that is claimed, but fail to describe the hardness of the copolymer. Arimatsu et al. teach a flexographic

Art Unit: 2854

printing plate composition (column 5, lines 67-68) "wherein the light sensitive material is a polymer with a hardness between 60 and 70 ShA (column 6, lines 5-6)." The composition of Arimatsu et al. results in a tough and flexible plate (column 2, lines 20-25). Therefore, at the time of the invention, it would have been obvious to one having ordinary skill in the art to use the flexographic printing plate composition of Arimatsu et al. in the modified invention of AAPA in order to have a printing plate which is tough and flexible.

6. Claims 6-11 and 16-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over AAPA and Teng, as applied to claim 1 above, further in view of Kuczynski et al. (US 2003/0054153).

Regarding claim 6, AAPA and Teng teach all that is claimed, but fail to teach that "the light sensitive material is a photo-polymer containing at least two complementary crosslinking systems." However, Kuczynski et al. teach a crosslinking system for flexographic printing plates comprising two complementary systems (paragraphs 62-64 and AAPA, page 3 lines 9-10) in order to create or destroy other bonds between polymer chains at different times (paragraph 62). Therefore, at the time of the invention, it would have been obvious to one having ordinary skill in the art to implement a complementary crosslinking system in the method of AAPA and Teng in order to have more control over the system so that bonds could be created or destroyed at different times.

Art Unit: 2854

Regarding claim 7, Kuczynski et al. further teach "wherein a main system is used to create an image (paragraph 64)." In this paragraph, examiner interprets the 'main system' as the imaging system, and the 'complementary system' as the system which modifies the compressibility.

Regarding claim 8, Kuczynski et al. further teach "including using a complementary system to complete the crosslinking and to increase chemical and mechanical resistance (paragraphs 62-63 and paragraph 144)."

Regarding claim 9, Kuczynski et al. further teach "including using a complementary system to generate different compressibilities (paragraph 64)."

Regarding claim 10, Kuczynski et al. further teach "including partially crosslinking the photo-polymer to adjust viscosity and prevent cold creep during prolonged storage periods or transport (paragraph 62)." Examiner notes here that creating or destroying other bonds inherently adjusts the viscosity.

Regarding claim 11, Kuczynski et al. further teach "including sensitizing the photo-polymer with a flash of light before writing an image with the laser light (paragraph 70)."

Regarding claim 16, Kuczynski et al. further disclose "comprising tubular sleeve on a rigid support having a composite base and, attached on the base, the layer of light sensitive material which is free of solvents (paragraphs 24 and 85)."

Regarding claim 17, Kuczynski et al. further disclose "wherein the composite base has a thickness in a range from 0.2 to 40 mm (paragraph 99)."

Art Unit: 2854

Regarding claim 18, Kuczynski et al. further disclose "wherein the layer of the light sensitive material has a thickness in a range from 0.5 to 2 mm (paragraph 126)."

Regarding claim 19, Kuczynski et al. further disclose "wherein the sleeve includes a compressible layer (paragraph 24)."

Regarding claim 20, Kuczynski et al. further disclose "including a second sleeve containing an inserted layer for variation of thickness of the sleeve (paragraph 127)."

Regarding claim 21, Kuczynski et al. further disclose "wherein the inserted layer is compressible (paragraph 170. The compounds used here are indeed compressible)."

Regarding claim 22, Kuczynski et al. further disclose "wherein the tubular sleeve is extruded (paragraphs 91-92)."

Regarding claim 23, Kuczynski et al. further disclose "wherein the tubular sleeve is produced by rolling and attachment of a plate to a support cylinder or sleeve (paragraphs 84-86)."

Regarding claim 24, the recited method of creating the flexographic printing plate does not define over the modified structure of AAPA.

Regarding claim 25, Kuczynski et al. further disclose "wherein the rigid support includes a base made of polyester film (paragraphs 85, 86, 2, and 3)."

Regarding claim 26, Kuczynski et al. further disclose "including a plurality of the layers of light sensitive material (paragraph 170)."

Art Unit: 2854

Regarding claim 27, Kuczynski et al. do not specifically say that the "flexographic printing plate is etchable with one of water, an aqueous solution under pressure, high temperature, and brushing." Kuczynski et al. do teach that the plate is developed in the usual manner (paragraph 168). One having ordinary skill in the art would recognize that this means the plate would be "etchable with one of water, an aqueous solution under pressure, high temperature, and brushing" in order to create a developed flexographic printing plate.

7. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over AAPA and Teng, as applied to claim 1 above, further in view of Robinson et al. (US 5795647).

Regarding claim 14, AAPA, Teng and Kuczynski et al. fail to teach that the sleeve could be produced by "thermally projecting pre-formulated powders onto a support sleeve to produce the sleeve." However, one having ordinary skill in the art would recognize that powder coating and extrusion coating methods are both recognized as equivalent methods of applying polymers. Further, column 2, lines 15-18 of Robinson et al., teach the same. Therefore, at the time of the invention, it would have been obvious to one having ordinary skill in the art to use either method in order to easily and properly apply the polymers for the flexographic printing plate.

Art Unit: 2854

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Column 2, lines 15-18 of Robinson et al. (US 5795647) discusses polymer coating methods.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joshua D. Zimmerman whose telephone number is 571-272-2749. The examiner can normally be reached on M-R 8:30A - 6:00P, Alternate Fridays 8:30A-5:00P.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Judy Nguyen can be reached on 571-272-2258. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



JUDY NGUYEN
SUPERVISORY PATENT EXAMINER